

ABRA

- Gravity **13.6 BLG**
- ABV ---
- IBU **77**
- SRM **39.7**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15 liter(s)**
- Total mash volume **20 liter(s)**

Steps

- Temp **52 C**, Time **10 min**
- Temp **62 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **15 liter(s)** of strike water to **57.3C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **40 min** at **62C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	1.5 kg (30%)	79 %	6
Grain	Strzegom Pilzneński	1.5 kg (30%)	80 %	4
Grain	Karmelowy Czerwony	0.6 kg (12%)	75 %	59
Grain	Żytni	1 kg (20%)	85 %	8
Grain	Strzegom Czekoladowy ciemny	0.2 kg (4%)	68 %	1200
Grain	Jęczmień palony	0.2 kg (4%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	30 g	60 min	15.3 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	20 g	10 min	15.5 %
Aroma (end of boil)	Citra	20 g	10 min	12 %
Dry Hop	Citra	30 g	7 day(s)	12 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale

Extras

Type	Name	Amount	Use for	Time
Fining	Irish Moss	5 g	Boil	15 min